



2123  
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PTO/SB/21 (09-04)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	09/896,136	
	Filing Date	June 29, 2001	
	First Named Inventor	Kok-Thye Lim	
	Art Unit	2123	
	Examiner Name	Eduardo Garcia Otero	
Total Number of Pages in This Submission	12	Attorney Docket Number	1048-OBJ1117-US

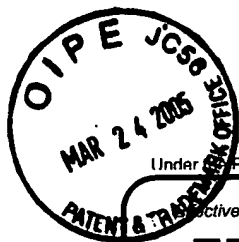
ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
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<input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input checked="" type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Form PTO-1449 (6 pgs); Cited References (37); Return Receipt Postcard	
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	TOLER, LARSON & ABEL, LLP		
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Printed name	John R. Schnell		
Date	03/21/2005	Reg. No.	50,776

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# FEE TRANSMITTAL For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 180.00

PTO/SB/17 (11-04)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 10/01/2004. Patent fees are subject to annual revision.

## Complete if Known

Application Number	09/896,136
Filing Date	June 29, 2001
First Named Inventor	Kok-Thye Lim
Examiner Name	Eduardo Garcia Otero
Art Unit	2123
Attorney Docket No.	1048-OBJ1117-US

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order

☐ Deposit Account ☐ None

Deposit  
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TOLER, LARSON & ABEL, LLP

The Director is hereby authorized to: (check all that apply)

- ☒ Charge fee(s) indicated below
- ☐ Charge fee(s) indicated below, except for the filing fee
- ☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17
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## FEE CALCULATION

### 1. BASIC FILING FEE

Fee Description	Fee (\$)	Small Entity Fee (\$)	Fee Paid(\$)
Utility Filing Fee	790	395	
Design Filing Fee	350	175	
Plant Filing Fee	550	275	
Reissue Filing Fee	790	395	
Provisional Filing Fee	160	80	

Subtotal (1) \$ 0.00

## FEE CALCULATION (continued)

### 2. EXTRA CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20	18	9
Each independent claim over 3	88	44
Multiple dependent claims	300	150
For Reissues, each claim over 20 and more than in the original patent	18	9
For Reissues, each independent claim more than in the original patent	88	44

Total Claims Extra Claims Fee (\$) Fee Paid (\$)

- 20 or HP =  $\times$  =  
HP = highest number of total claims paid for, if greater than 20

Indep. Claims Extra Claims Fee (\$) Fee Paid (\$)

- 3 or HP =  $\times$  =  
HP = highest number of independent claims paid for, if greater than 3

Multiple Dependent Claims Fee (\$) Fee Paid (\$)

Subtotal (2) \$ 0.00

### 3. OTHER FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)	Fee Paid(\$)
1-month extension of time	110	55	
2-month extension of time	430	215	
3-month extension of time	980	490	
4-month extension of time	1,530	765	
5-month extension of time	2,080	1,040	
Information disclosure stmt. fee	180	180	180.00
37 CFR 1.17(q) processing fee	50	50	
Non-English specification	130	130	
Notice of Appeal	340	170	
Filing a brief in support of appeal	340	170	
Request for oral hearing	300	150	

Other:

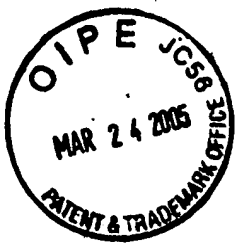
Subtotal (3) \$ 180.00

## SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	50,776	Telephone	512-327-5515
Name (Print/Type)	John R. Schell	Date	03/21/2005		

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Kok-Thye Lim, et al.

Title: MÉTHOD AND SYSTEM FOR HIGH-RESOLUTION MODELING OF A WELL BORE IN A HYDROCARBON RESERVOIR

Application No.: 09/896,136

Filed: June 29, 2001

Examiner: Eduardo Garcia Otero

Group Art Unit: 2123

Atty. Docket No.: 1048-OBJ1117-US

COMMISSIONER FOR PATENTS  
PO Box 1450  
Alexandria, VA 22313-1450

03/25/2005 BABRAHA1 00000056 502469 09896136  
01 FC:1806 180.00 DA

**INFORMATION DISCLOSURE STATEMENT TRANSMITTAL**

Dear Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, the undersigned brings the patents, publications, applications or other information identified in the attached:

- ☒ Form(s) PTO/SB/08A and/or PTO/SB/08B or PTO/1449  
☐ Other: n/a

to the Examiner's attention in the above-identified application. Citation of such information shall not be construed as:

1. an admission that the information necessarily is, or corresponds to, prior art with respect to the instant invention;
2. a representation that a search has been made, other than as described below; or
3. an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

For each item of information listed that is not in the English language, the undersigned has provided a concise explanation of the relevance, such as through (i) an English language abstract, (ii) an English language equivalent application, (iii) reference to discussion in the application, or (iv) if cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action that indicates the degree of relevance found by the foreign office.

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Elise K. Dougherty  
Typed or Printed Name

E.K. Dougherty  
Signature

STATEMENT UNDER 37 C.F.R. § 1.704(d)

If the above-identified application is an original application filed on or after May 29, 2000:

- ☐ each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of this Information Disclosure Statement.

FEES DUE

This Information Disclosure Statement is being filed:

- ☐ within three months of the filing date of a national application or within three months of entry of the national stage as set forth in § 1.491 in an international application. Therefore, no fee is required.
- ☐ before the mailing date of a first Office action on the merits or before the mailing date of a first Office action after the filing of a request for continued examination under § 1.114. Therefore, no fee is believed required.
- ☐ during the period specified in § 1.97(c). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application not more than three months prior to the filing of this Information Disclosure Statement.
- ☒ during the period specified in § 1.97(c). Accordingly, the fee set forth in § 1.17(p) is required and provided as shown on the attached Fee Transmittal.
- ☐ during the period specified in § 1.97(d). Accordingly, the fee set forth in § 1.17(p) is required and provided as shown on the attached Fee Transmittal. Additionally, each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application not more than three months prior to the filing of this Information Disclosure Statement.

Should any PTO fees be necessary for entry of this Information Disclosure Statement, the undersigned hereby authorizes the Commissioner to charge Deposit Account 50-2469.

Respectfully submitted,



2.21.05  
Date

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PTO/SB/08A (08-03)

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**Complete if Known****INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 6

Application Number	09/896,136
Filing Date	June 29, 2001
First Named Inventor	Kok-Thye Lim
Art Unit	2123
Examiner Name	Eduardo Garcia Otero
Attorney Docket Number	1048-OBJ1117-US

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	A1	US- 3,029,018	04/10/1962	Floyd, Jr.	
	B1	US- 3,302,710	02/07/1967	Odeh	
	C1	US- 4,821,164	04/11/1989	Swanson	
	D1	US- 5,255,212	10/19/1993	Kondoh et al.	
	E1	US- 5,432,718	07/11/1995	Molvig et al.	
	F1	US- 5,572,634	11/05/1996	Duluk, Jr.	
	G1	US- 5,604,911	02/18/1997	Ushiro	
	H1	US- 5,617,322	04/01/1997	Yokota	
	I1	US- 5,675,521	10/07/1997	Holzhauser et al.	
	J1	US- 5,699,271	12/16/1997	Sagawa et al.	
	K1	US- 5,710,726	01/20/1998	Rowney et al.	
	L1	US- 5,740,342	04/14/1998	Kocberber	
	M1	US- 5,754,181	05/19/1998	Amdursky et al.	
	N1	US- 5,891,131	04/06/1999	Rajan et al.	
	O1	US- 5,966,524	10/12/1999	Burnett et al.	
	P1	US- 6,014,473	01/11/2000	Hossack et al.	
	Q1	US- 6,018,497	01/25/2000	Gunasekera	
	R1	US- 6,028,607	02/22/2000	Chan	
	S1	US- 6,041,017	03/21/2000	Goldsberry	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	T1	EP 0 709 789 A2	05/01/1996			
	U1	EP 0 801 364 B1	07/30/2003		English Abstract	
	V1	FR 2,775,094	08/20/1999		English Abstract	
	W1	GB 2,326,747 A	12/30/1998			
	X1	WO 99/40532	08/12/1999			
	Y1	WO 99/52048	10/14/1999			

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Application Number	09/896,136
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First Named Inventor	Kok-Thye Lim
Art Unit	2123
Examiner Name	Eduardo Garcia Otero
Attorney Docket Number	1048-OBJ1117-US

Sheet **2**of **6****U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	A2	US- 6,052,520	04/18/2000	Watts, III	
	B2	US- 6,054,992	04/25/2000	Gibson	
	C2	US- 6,064,810	05/16/2000	Raad et al.	
	D2	US- 6,070,125	05/30/2000	Murphy et al.	
	E2	US- 6,078,869	06/20/2000	Gunasekera	
	F2	US- 6,106,561	08/22/2000	Farmer	
	G2	US- 6,191,796 B1	02/20/2001	Tarr	
	H2	US- 6,313,837 B1	11/06/2001	Assa et al.	
	I2	US- 6,445,390 B1	09/03/2002	Aftosmis et al.	
	J2	US- 6,448,788 B1	09/10/2002	Meaney et al.	
	K2	US- 6,516,080 B1	02/04/2003	Nur	
	L2	US- 6,552,724 B1	04/22/2003	Marshall	
	M2	US- 6,587,104 B1	07/01/2003	Hoppe	
	N2	US- 6,608,628 B1	08/19/2003	Ross et al.	
	O2	US- 6,674,432 B2	01/06/2004	Kenyon et al.	
	P2	US- 5,553,009	09/03/1996	Meshkat et al.	
	Q2	US- 5,999,187	12/07/1999	Dehmlow et al.	
	R2	US- 6,816,820 B1	11/09/2004	Friedl et al.	
	S2	US- 2002/0032494 A1	03/14/2002	Kenyon et al.	

**FOREIGN PATENT DOCUMENTS**

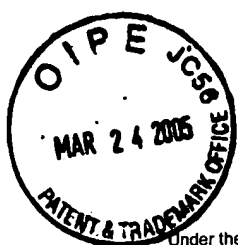
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	T2	WO 99/57418	11/11/1999			
	U2	WO 02/01251 A2	01/03/2002			
	V2	WO 02/02901 A2	01/10/2002			
	W2	WO 02/03101 A2	01/10/2002			
	X2	WO 02/03103 A2	01/10/2002			
	Y2	WO 02/03262 A2	01/10/2002			

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Attorney Docket Number	1048-OBJ1117-US

Sheet **3** of **6**

### U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	A3	US- 2002/0032550 A1	03/14/2002	Ward et al.	
	B3	US- 2002/0035453 A1	03/21/2002	Pond, Jr. et al.	
	C3	US- 2002/0046014 A1	04/18/2002	Kenyon	
	D3	US- 2002/0067373 A1	06/06/2002	Roe et al.	
	E3	US- 2002/0072883 A1	06/13/2002	Lim et al.	
	F3	US- 2002/0082813 A1	06/27/2002	Lim et al.	
	G3	US-			
	H3	US-			
	I3	US-			
	J3	US-			
	K3	US-			
	L3	US-			
	M3	US-			
	N3	US-			
	O3	US-			
	P3	US-			
	Q3	US-			
	R3	US-			
	S3	US-			

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		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	T3	WO 02/03263 A2	01/10/2002			
	U3	WO 02/03264 A2	01/10/2002			
	V3	WO 02/03265 A2	01/10/2002			
	W3					
	X3					
	Y3					

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

Application Number	09/896,136
Filing Date	June 29, 2001
First Named Inventor	Kok-Thye Lim
Art Unit	2123
Examiner Name	Eduardo Garcia Otero
Attorney Docket Number	1048-OBJ1117-US

Sheet	4	of	6
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**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A4	P.A. Forsyth, et al., "Local Mesh Refinement and Modeling of Faults and Pinchouts", SPE FORM EVALUATION, June 1986, Vol. 1, No. 3, pages 275-285. XP-002191830	
	B4	Y. Ding, et al., "Developement of Dynamic Local Grid Refinement in Reservoir Simulation", Proceedings of the 13th SPE Symposium on Reservoir Simulation, New Orleans, LA, February-March 1993, pages 501-510. XP-002191831	
	C4	S. Verna, et al., "A Control Volume Scheme for Flexible Frids in Reservoir Simulation", Proceedings of the 1997 SPE Reservoir Simulation Symposium, Dallas, TX, June 1997, pages 215-227. XP-002191832	
	D4	S. Kocberber, et al., "An Automatic, Unstructured Control Volume Generation System for Geologically Complex Reservoirs", Proceedings of the 1997 SPE Reservoir Simulation Symposium, Dallas, TX, June 1997, pages 241-252. XP-002191833	
	E4	Y. Kuwauchi, et al., "Development and Applications of a Three Dimentsional Voronoi-Based Fexible Grid Black Oil Reservoir Simulator", SPE Asia Specific Oil & Gas Congerence, Adelaide, Australia, October 1996, pages 1-12. XP-002191834.	
	F4	R. Page, et al., "A Functional Program Describing a Simple Reservoir Model and Its Potential for Parallel Computation", Proceedings of the 1990 Symposium on Applied Computing, IEEE, April 1990, pages 85-91.	
	G4	C. Giertsen, et al., "Volume Visulization of Sparse Irregular Meshes", Computer Graphics and Applications, IEEE, Vol. 2, No. 2, March 1992, pages 40-48.	
	H4	S. Ghosh, "Curvilinear Local Grid Refinement", SPE 50633, SPE European Petroleum Conference, The Netherlands, 20-22 October, 1998.	
	I4	H. N. Sharpe, et al., "A New Adaptive Orthogonal Grid Generation Procedure for Reservoir Simulation" 65th Annual Technical Conference and Exhibition of the Society of Petroleum Engineers. New Orelans. LA. September 23-26. 1990.	
	J4	M. Wheeler, et al., "A Parallel Multiblock/Multidomain Approach for Reservoir Simulation", Proceedings of the 1999 15th Symposium on Reservoir Simulation, Houston, TX, February 1999. XP-002188857	

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	A5	D. Kahaner, et al., "An Expreimental Algorithm for N-Dimensional Adaptive Quadrature", ACM Transactions on Mathematical Software (TOMS), March 1979, pages 86-96.	
	B5	Y. Ozdogan, "Seismic Data Processing", Society of Exploration Geophysics, Tulsa, OK, 1991, pg. 514-515.	
	C5	S. Norris, et al., "Modeling Fluid Flow Around Horizontal Wellbores", Proceedings: SPE Annual Technical Conference and Exhibition 1990 Part 4, New Orleans, LA September 23-26, 1990, Vol. SIGMA, pp. 65-75.	
	D5	P. Perrochet, "Finite Hyperelements: A 4D Geometrical Framework Using Coariant Baes and Metric Tensors" COMMUNICATIONS IN NUMERICAL METHODS IN ENGINEERING, June 1995, UK, vol. 11, no. 6, pgs 525-534	
	E5	J.M.M. Regtien, et al., "Interactive Reservoir Simulation", Proceedings of the 13th Symposium on Reservoir Simulation, San Antonio, TX February 12-15, pgs. 545-552.	
	F5	C. Buckalew, et al., "Oilfield Visulization on the PC Platform", 2000 SPE/AAPG Western Regional Meeting, June 19-23, 2000, pgs 1-5.	
	G5	E. Farkas, "Linearization Techniques of Reservoir Simulation Equations: Fully Implicit Cases, Proceedigns of the 1997 SPE Reservoir Simulation Symposium, Dallas, Texas June 8-11, 1997, pgs 87-95.	
	H5	E. Farkas, "Linearization Techniques of Reservoir Simulation Equations: Fully Implicit Cases, Richardson, Texas, December 1998, Vol. 3, no. 4, pgs. 316-323.	
	I5	P. Benedeck, "Capacitances of Planar Multiconductor Configuration on a Dielectric Substrate by a Mixed Order Finite-Element Method, IEEE1974.	
	J5	Fu, et al., "Time Integration Procedures for a Cyclic Thermoviscoplasticity Model for Pb-Sn solder applications, IEEE 1996.	

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	A6	P. J. Zwart, et al., "Space-Time Meshing for Two-Dimensional Moving Boundary Problems", Proceedings of the Seventh International Meshing Roundtable, pgs 187-199, 1998.	
	B6	S. L. Ho, et al., "Generation and Rotation of 3-D Finite Element Mesh for Skewed Rotor Induction Motors Using Extrusion Technique", IEEE Transactions on Magnetics, pgs 1266-1269, May 1999.	
	C6		
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